

1. A method for adding an intermediate support rail in a spiral conveyor belt system, for supporting a conveyor belt in its helical path where the conveyor belt rests on existing supports near the edges of the belt, the existing supports being secured to cantilevered generally horizontal rods or bars extending inwardly from peripheral support structure, comprising:

10 assembling onto the cantilevered horizontal support bars a series of cantilever clamp flanges, in a position along each cantilevered support bar between existing belt supports,

15 assembling onto the clamp flanges a series of rail members, the rail members having means for assembly together end-to-end and the rail members having means for engagement with the cantilever clamp flanges, and including assembling the rail members together and to the clamp flanges, such that the rail members form a continuous rail following a helical path through the helical conveyor belt, and

20 securing over the top of the assembled rail a wear strip, whereby additional support is provided for carrying relatively heavy loads on a spiral conveyor belt without requiring substantial disassembly of the spiral conveyor belt system.

2. The method of claim 1, wherein the cantilever clamp flanges comprise plastic members having a C-shaped or U-shaped snap-over central clamp structure for engaging on cantilevered support bars.

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3. The method of claim 2, wherein each cantilever clamp flange further includes a channel at each of fore and aft positions on the clamp flange, and wherein the rail members include generally U-shaped recesses extending upwardly from the bottom edge of the rail member, and wherein the step of assembling the rail members onto the cantilever clamp flanges comprises engaging the U-shaped recesses of the rail members down over the cantilever clamp flanges such that the rail member at areas immediately fore and aft of the U-shaped recess slides into and engages within the channels on the cantilever clamp flange.

4. The method of claim 3, wherein the channels are angled slightly in extending fore and aft of the central clamp structure, causing the clamp flange to deform when the rail member is assembled into the channels such that the clamp flange firmly grips the cantilevered support bar.

20 5. The method of claim 1, wherein the rail members comprise rail sections having height substantially greater than width, and

each having two ends, one end with a generally horizontal elongated slot and the other having a generally horizontal elongated projection narrowed in height, the narrowed projection forming a tongue and the slot forming a groove for end-to-end  
5 assembly of successive rail sections.

6. The method of claim 5, further including means for inserting a fastener to secure the projection and slot at a desired position, with the projection inserted a desired distance  
10 into the slot.

7. The method of claim 1, including temporarily lifting sections of the conveyor belt above the existing supports while said assembling and securing steps are performed, the method  
15 being performed without removing the conveyor belt from the existing belt supports.

8. The method of claim 1, wherein the cantilever clamp flanges are springably deformable and are snapped over the  
20 cantilevered support bars.

9. The method of claim 8, wherein the cantilever clamp flanges have a C-shaped snap-over clamp structure for engaging onto cylindrical cantilevered support bars.

10. The method of claim 8, wherein the cantilever clamp flanges have a U-shaped clamp structure for engaging onto generally rectangular cantilevered support bars.

5        11. The method of claim 1, wherein a metal conveyor belt is removed prior to assembly of the cantilever clamp flanges onto the cantilevered support bars, and after the wear strip is secured on the assembled rail, a plastic modular conveyor belt is assembled into the spiral conveyor belt system.

10        12. The method of claim 1, wherein the wear strip comprises an inverted U-shaped wear strip secured down over the top surface of the rail member.

15        13. A set of components for adding a further support rail in a spiral conveyor belt, where additional support is required between the edges of the spiral belt, comprising:

20        a series of cantilever clamp flanges, each having engagement means for engaging over an existing cantilevered support bar comprising one of many such support bars arranged at intervals and extending generally inwardly, arranged in a generally helical path for support of the existing conveyor belt,

      a series of rail members, each having means for engagement onto a cantilever clamp flange and each having means for

connection with a successive rail member, and  
a wear strip adapted to fit down over the series of rail  
members when assembled together and supported by the clamp  
flanges,

5        whereby one or more additional support rails can be added to  
an existing spiral conveyor belt system with or without  
dismantling the conveyor belt from the existing support  
apparatus.

10        14. The apparatus of claim 13, wherein each cantilever  
clamp flange comprises a plastic member having a generally C-  
shaped or U-shaped opening sized to deform and snap over an  
existing tubular cantilevered support bar.

15        15. The apparatus of claim 14, wherein the cantilever clamp  
flange includes fore and aft channels for engagement with a rail  
member, and wherein each rail member includes at least one recess  
generally in the shape of an inverted U and sized to slide down  
over the cantilever clamp flange and to engage with the fore and  
20        aft channels.

16. The apparatus of claim 15, wherein the rail members are  
of metal, plastic or composites.

17. The apparatus of claim 15, wherein the fore and aft channels on the cantilever clamp flanges are slightly angled relative to an axis of the C-shaped or U-shaped opening, at an angle such that when the rail members are assembled into the 5 channels the clamp flanges deform to firmly grip the cantilevered support bars.

18. The apparatus of claim 13, wherein each rail member has two ends, with a tongue-and-groove interfit arrangement between 10 one end of one rail section and the adjacent end of a succeeding rail section, by which a projection or tongue of the succeeding rail section is inserted into an elongated longitudinal slot of an adjacent rail section, to a desired and adjustable extent, with fastening means for securing the two rail sections together 15 at such desired extent, whereby two adjacent rail sections can be assembled to accommodate a desired length within the helical path.

19. A method for adding an intermediate support rail in a 20 spiral conveyor belt system, for supporting a conveyor belt in its helical path where the conveyor belt rests on existing supports near the edges of the belt, the existing supports being secured to cantilevered generally horizontal rods or bars extending inwardly from peripheral support structure, comprising:

assembling onto the cantilevered horizontal support bars a series of cantilever rail supports, in a position along each cantilevered support bar between existing belt supports, and

5 assembling an intermediate support rail on the cantilever rail supports,

whereby additional support is provided for carrying relatively heavy loads on a spiral conveyor belt.

10 20. The method of claim 19, including temporarily lifting sections of the conveyor belt above the existing supports while said assembling step is performed, the method being performed without removing the conveyor belt from the existing belt supports.

15 21. The method of claim 20, wherein the intermediate support rail is assembled into the conveyor belt system in sections.

20 22. The method of claim 21, wherein a rail section is assembled to each cantilever rail support, the rail section having an inverted U-shaped recess which slides down over and engages with the cantilever rail support.